BRIEFER ARTICLES

THE PERFECT STAGE OF THE ASCOCHYTA ON THE HAIRY VETCH

It is quite well known that species of the form-genus *Ascochyta* produce a disease of the vetch, pea, and other leguminous plants. In the autumn of 1908 I collected a number of affected pods of the hairy vetch (*Vicia villosa*) which was growing on the farm of Cornell University. These were placed in a wire cage and partly covered by some leaves and grass used as a mulch for *Rhododendron maximum* in my garden. It was hoped that the perfect stage might be obtained. During early May in 1909 the cage was taken to the laboratory, and a few pods were found on which there were a number of perithecia which proved to belong to the genus *Sphaerella* (*Mycosphaerella*), although pycnidia of the *Ascochyta* were present on the same pods. They were at some distance from the perithecia, and by using care it was not a difficult matter to obtain an abundance of ascospores for making pure cultures in bean pod agar, and also for inoculation of vetch seedlings.

The germination of the ascospores was studied and the growth of the colonies was observed up to the formation of pycnidia and pycnospores identical with those formed on the vetch pods, evidence that this *Sphaerella* was the perfect stage of the *Ascochyta* of the vetch. Inoculations of vetch seedlings were made with pycnospores obtained in pure culture from sowings of ascospores. These were somewhat slow in taking, but on May 18 a few brown spots appeared on the stems, and on May 24 some of the leaves were dead and pycnidia of the *Ascochyta* were present.

On May 13 ascospores taken directly from the pods of the vetch were sown on vetch seedlings. On May 17 brownish depressed spots were present on the stems. By May 18 these spots had encircled the stem and the terminal shoot was thus killed. Again on May 15 ascospores were placed on young vetch seedlings. On May 18 a few of the leaves were dead and pycnidia were present. By May 22 the disease had spread somewhat and more pycnidia of the *Ascochyta* were formed. On May 15 pea seedlings about 10 cm. high were inoculated with asco-

spores from the vetch pods. By May 18 the edges of some of the leaves were dead and a few pycnidia of *Ascochyta* were formed. In all of these cases check host plants remained free from the disease.

The ascospores are shot out from the asci on the absorption of water. This was observed in a number of cases. While this is given as the characteristic method of escape of spores in the family Mycosphaerellaceae, the behavior of the asci and spores is not the same in all species. In this *Sphaerella* the outer, firm layer of the ascus wall is ruptured or dissolved at the apex, and the inner, thin layer then stretches out to three or four times the length of the mature ascus. When the spores are shot out through the end of this inner membrane, either successively or in a group, the inner membrane, which is very thin, collapses, while the outer layer of the wall, which does not stretch, usually remains firm.

Ascochyta occurs, usually in abundance, on the vetch, pea, and *Melilotus* in the vicinity of Ithaca. For the purpose of comparing the species on these different hosts, studying the life history and interrelationships on the different hosts, this problem was assigned in 1910 to Mr. R. E. STONE, a graduate assistant in the department of botany. This work is now completed and will shortly be published in the *Annales Mycologici*.—GEORGE F. ATKINSON, *Cornell University, Ithaca, N.Y.*

GAUTIERIA IN THE EASTERN UNITED STATES

For many years before seeing a specimen of the genus *Gautieria* I had longed to find one, since it occupies a rather unique position in the Gasteromycetes, because it is the only representative of the group in which a peridium is wanting. From the literature and illustrations I had a fairly good concept of it, and each year wished that I might have a specimen to exhibit to my classes, because it offers such an excellent demonstration of the gleba of a gasteromycete without sectioning or removing the peridium.

On October 30, 1905, Dr. A. A. ALLEN, recently an assistant in the department of zoology at Cornell University, who was then a Freshman, brought into my laboratory a small plant about the size of a marble which I at once recognized as *Gautieria*. He had collected it the previous day while on a stroll through the woods on South Hill about three miles distant from the university. Seeing an old, half-decayed specimen of *Ganoderma applanatum* lying on the ground, where it had fallen from